

IN THE CLAIMS:

1. (currently amended) A method of forming groups of products, the method comprising the steps of :

feeding a substantially continuous input succession (2) of said products (3) to an input (6) of an endless conveyor (13), which comprises ~~a number of product-holder units (35) equally spaced along the conveyor (13);~~ a single flexible elongated conveying member (16) and extends through said input (6) and an output (8), which define, on the conveyor (13), a conveying branch (14) and a return branch (15) of respective lengths;

coupling, at said input (6), the products (3) to revant product-holder units (35), which are carried by the flexible elongated conveying member (16) and are equally spaced along the conveyor flexible elongated conveying member (16);

maintaining each product (3) coupled to the same product-holder unit (35) from said input (6) to said output (8) and along the entire conveying branch (14);

separating, at said output (8), the products (3) from the product-holder units (35);

imparting to said conveyor (13) a variable first ~~travelling~~ traveling speed to generate, at said input (6), a succession of equally spaced on-line gaps (11), each corresponding to a relative vacant product-holder unit (35), and to define, along said conveying branch (14), a succession of groups (10) of products (3), each separated from each adjacent said group (10) by a said on-line gap (11); and

varying the lengths of said conveying and return branches (14, 15) in complementary manner to impart to said conveyor (13) a constant second speed at said output (8).

2. (original) A method as claimed in claim 1, and comprising the further step of varying the lengths of said conveying and return branches (14, 15) in complementary manner to vary said first speed and compensate for any input gaps (9) in said input succession (2).

3. (original) A method as claimed in claim 2, wherein said first speed is temporarily zeroed at said input (6) and simultaneously with the presence, at said input (6), of a said input gap (9).

4. (original) A method as claimed in claim 1, wherein said first speed is imparted by a variable-speed motor (25) connected to said return branch (15).

5. (original) A method as claimed in claim 4, wherein the lengths of said conveying and return branches (14, 15) are varied in complementary manner by moving said conveying and return branches (14, 15) transversely and in the same direction.

6. (original) A method as claimed in claim 5, wherein the lengths of said conveying and return branches (14, 15) are varied in complementary manner by moving said conveying and return branches (14, 15) by means of a first and, respectively, a second rotary transmission member (31, 33) carried by a common support (29) movable transversely with respect to the conveying and return branches (14, 15).

7. (original) A method as claimed in claim 6, wherein said second rotary transmission member (33) engages said return branch (15) between said output (8) and a point of connection to said motor (25).

8. (original) A device for forming groups of products, the device comprising :
an endless conveyor (13) having a single flexible elongated conveying member (16) and an input (6) and an output (8), which define, along the conveyor (13), a conveying branch (14) and a return branch (15) of respective lengths; wherein said conveyor (13) receives, at said input (6), a substantially continuous input succession (2) of said products (3) said conveyor (13) receiving, at said input (6), a substantially continuous input succession (2) of said products (3), and comprising a number of product-holder units (35) equally spaced along the conveyor (13);

a number of product-holder units (35) which are carried by the flexible elongated conveying member (16) and are equally spaced along the conveyor flexible elongated conveying member (16); wherein each product-holder unit (35) receives a relevant product (3) at said input (6), holds the same product (3) from said input (6) to said output (8), and realise the product (3) at said output (8);

first actuating means (25) for imparting to said conveyor (13) a variable first travelling speed, and for generating, at said input (6), a succession of equally spaced on-line gaps

(11), each defined by a relative vacant product-holder unit (35) and separating two adjacent said groups (10) of products (3) along said conveying branch (14); and

second actuating means (27) for varying the lengths of said conveying and return branches (14, 15) in complementary manner to impart to said conveyor (13) a constant second speed at said output (8).

9. (original) A device as claimed in claim 8, wherein said first actuating means (25) comprise a "brushless" motor (25).

10. (original) A device as claimed in claim 8, wherein said conveyor (13) comprises first rotary transmission means (23) connected to said first actuating means (25); a number of idle second rotary transmission means (17, 19, 21); and an elongated conveying member (16) looped about said first and second rotary transmission means (23, 17, 19, 21).

11. (original) A device as claimed in claim 10, wherein said first rotary transmission means (23) are connected to the return branch (15).

12. (original) A device as claimed in claim 8, wherein said second actuating means (27) comprise a powered support (29) movable in a direction (28a) substantially crosswise to said conveying and return branches (14, 15); and a further two rotary transmission means (31,

33) fitted idly to said support (29), and of which a first (31) engages said conveying branch (14), and a second (33) engages said return branch (15).

13. (original) A device as claimed in claim 12, wherein said second further rotary transmission means (33) engages said return branch (15) between said output (8) and said first rotary transmission means (23).

14. (original) A device as claimed in claim 12, wherein one (19) of said second rotary transmission means (17, 19, 21) engages an intermediate portion of said conveying branch (14), and is located on the opposite side of said first further rotary transmission means (31) to said input (6).

15. (original) A device as claimed in claim 10, wherein said elongated conveying member (16) comprises two side by side chains (16); and said rotary transmission means (17, 19, 21, 23) and said further rotary transmission means (31, 33) each comprise two coaxial sprockets, each meshing with a respective said chain (16); each said product-holder unit (35) being located between said two chains (16) and crosswise to the chains (16).

16. (new) A device as claimed in Claim 8, wherein a central portion of said conveying branch (14) is arranged according to an "S" shape.

17. (new) A method of forming groups of products, the method comprising the steps of :

feeding a substantially continuous input succession (2) of said products (3) to an input (6) of an endless conveyor (13), which extends through said input (6) and an output (8), which define, on the conveyor (13), a conveying branch (14) and a return branch (15) of respective lengths;

coupling, at said input (6), the products (3) to relevant product-holder units (35), which are carried by the conveyor (13) and are equally spaced along the conveyor (13);

separating, at said output (8), the products (3) from the product-holder units (35);

imparting to said conveyor (13) and by a variable-speed motor (25) connected to said return branch (15) a variable first travelling speed to generate, at said input (6), a succession of equally spaced on-line gaps (11), each corresponding to a relative vacant product-holder unit (35), and to define, along said conveying branch (14), a succession of groups (10) of products (3), each separated from each adjacent said group (10) by a said on-line gap (11); and

varying the lengths of said conveying and return branches (14, 15) in complementary manner to impart to said conveyor (13) a constant second speed at said output (8) and by moving said conveying and return branches (14, 15) transversely and in the same direction by means of a first and, respectively, a second rotary transmission member (31, 33) carried by a common support (29) movable transversely with respect to the conveying and return branches (14, 15).

18. (new) A method as claimed in claim 17, wherein said second rotary transmission member (33) engages said return branch (15) between said output (8) and a point of connection to said motor (25).

19. (new) A device for forming groups of products, the device comprising:
an endless conveyor (13) having an input (6) and an output (8), which define, along the conveyor (13), a conveying branch (14) and a return branch (15) of respective lengths; wherein said conveyor (13) receives, at said input (6), a substantially continuous input succession (2) of said products (3), and comprises a number of product-holder units (35) equally spaced along the conveyor (13);

a number of product-holder units (35) which are carried by the conveyor (13) and are equally spaced along the conveyor (13);

first actuating means (25) for imparting to said conveyor (13) a variable first travelling speed, and for generating, at said input (6), a succession of equally spaced on-line gaps (11), each defined by a relative vacant product-holder unit (35) and separating two adjacent said groups (10) of products (3) along said conveying branch (14); and

second actuating means (27) for varying the lengths of said conveying and return branches (14, 15) in complementary manner to impart to said conveyor (13) a constant second speed at said output (8);

wherein said conveyor (13) comprises first rotary transmission means (23) connected to said first actuating means (25); a number of idle second rotary transmission means

(17, 19, 21); and an elongated conveying member (16) looped about said first and second rotary transmission means (23, 17, 19, 21).

20. (New) A device as claimed in claim 19, wherein said first rotary transmission means (23) are connected to the return branch (15).

21. (New) A device as claimed in claim 19, wherein said second actuating means (27) comprise a powered support (29) movable in a direction (28a) substantially crosswise to said conveying and return branches (14, 15); and a further two rotary transmission means (31, 33) fitted idly to said support (29), and of which a first (31) engages said conveying branch (14), and a second (33) engages said return branch (15).

22. (New) A device as claimed in claim 21, wherein said second further rotary transmission means (33) engages said return branch (15) between said output (8) and said first rotary transmission means (23).

23. (New) A device as claimed in claim 21, wherein one (19) of said second rotary transmission means (17, 19, 21) engages an intermediate portion of said conveying branch (14), and is located on the opposite side of said first further rotary transmission means (31) to said input (6).

24. (New) A device as claimed in claim 19, wherein said elongated conveying member (16) comprises two side by side chains (16); and said rotary transmission means (17, 19, 21, 23) and said further rotary transmission means (31, 33) each comprise two coaxial sprockets, each meshing with a respective said chain (16); each said product-holder unit (35) being located between said two chains (16) and crosswise to the chains (16).